

**Tetra Tech, Inc.**

4213 State Street, Suite 100
 Santa Barbara, CA 93110-2847
 VOICE (805) 681-3100 FAX (805) 681-3108

Project: **TO-42, Vandenberg Air Force Base IRP**Log of Well No. **5-MW-21**

Location: Approximately 12 feet southwest of 5-MW-7 in the unnamed tributary.

Date Started: 2/28/02 Completed: 3/3/02

Logged By: Joss Moore Checked By: R.J. Elliot, R.G.

Drilled By: Roy Buckenberger, Boart Longyear

Drilling Equipment: Boart Longyear Sonic Drill

Sampling Equipment: 10' Stainless Steel Bailer

GS Elev.: 291.4 ft above MSL TD: 214 ft bgs

4" Sch. 80 PVC Bank Casing: from 0 ft bgs to 110 ft bgs

4" Stainless Steel Screen: from 110 ft bgs to 120 ft bgs

Cement: from 0 ft bgs to 5 ft bgs

Bentonite Transitional Seal: from 5 ft bgs to 105 ft bgs

Sand Filter Pack: from 105 ft bgs to 131 ft bgs

TOC Elev.: 293.67 ft above MSL

Depth (ft bgs)	MATERIAL DESCRIPTION	Material Symbol	Material Type	Well Construction	Sample	Blow Counts per 6"	Percent Recovery	PID (ppm) Amb/Smp	REMARKS
5	sand, dark brown (10YR 3/3), fine grained, rounded, poorly graded, slightly moist, trace silt, Alluvium.		SP			NA			1540 hours Begin drilling
10							100	0/0	
15	very dark grayish brown (10YR 3/2)						100	0/0	
20	dark yellowish brown (10YR 4/4)						100	0/0	

103 ft bgs Groundwater depth during drilling. 56.38 ft bgs Groundwater depth after well development.

TC Number: K942-21

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20			SP				100		
25	<u>silty sand</u> , brown (10YR 4/3), fine grained, rounded, poorly graded, very moist, some silt, Orcutt Sand.		SM				100	0/0	
30									1715 Perched Zone Water level at 29 ft. bgs
35	dark grayish brown (10YR 4/2) subrounded, wet, little silt, trace clay.						70	0/0.6	
	<u>clayey sand</u> , brown (10YR 4/2), fine grained, subrounded, poorly graded, wet, little clay, few subangular gravel, Orcutt Sand.		SC						
40	<u>sandy clay</u> , brown (10YR 5/3), moist, high plasticity, some sand, coarse to medium grained, subrounded, poorly graded, Orcutt Sand.		CL				100	0/0	
	<u>clay with sand</u> , light olive brown (2.5Y 5/3), moist, high plasticity, little sand, fine grained, poorly graded.						100	0/0	
45									1820 Stop drilling



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45	<u>fat clay with sand</u> , light olive brown (2.5Y 5/3), moist, high plasticity, little sand, very fine grained, poorly graded.		CH				100	0/0	3/1/02 0730 Resume drilling
50							100	0/ 10.4	
55	<u>clayey sand</u> , light olive brown (2.5Y 5/4), fine grained, poorly graded, moist. some fine grained sand, little silt.		SC				100	0/9.6	
			ML						
60	<u>silt with sand</u> , brown (10YR 4/3), slightly moist, low plasticity, little sand, fine grained, subrounded, moderately graded, Careaga. <u>silt</u> , few sand, rounded, poorly graded.							0/ 16.2	
								0/ 22.6	
65	 very dark gray, (2.5Y 3/1), trace shell fragments.						100	0/ 34.6	1200 Collect soil sample V5B19H-65
							100	0/0	
70									

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70	<u>silt</u> , very dark gray (2.5Y 3/1), slightly moist, trace clay, low plasticity, Careaga.		ML				100		Drilling is tight.
75	few clay, moderate plasticity.						100	0/0	
80							100	0/0	
85							100	0/0	
90	dark olive gray (5Y 3/2).						100	0/0	
95									

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95	<u>silt</u> , dark olive gray (5Y 3/2), slightly moist, little clay, slight plasticity, Careaga.		ML				100	0/0	
100	trace shell fragments.								
	no shell fragments.								
105	moist, few clay.						100	0/0	3/2/02 1350 Water level at 103 ft. bgs 1355 Collect water sample V5B19H-105
110	trace clay.						100	0/0	
115							100	0/0	1355 Collect water sample V5B19H-115 Collect soil sample V5MW21H-115 for physical parameters testing 1715 End drilling 3/2/02 0705 Resume drilling
120									

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120	<u>silt</u> , dark olive gray (5Y 3/2), slightly moist, trace clay, low plasticity, Careaga.		ML				100		Drilling is tight.
125	trace shell fragments.						100	0/0	0750 Collect water sample V5B19H-125 4" Stainless steel sump installed from 120 to 130 ft bgs.
130							100	0/1.8	
135	no shell fragments.						100	0/7.7	0845 Collect water sample V5B19H-135
140							100	0/8.1	
145									End of water bearing silts at 143 ft. bgs

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145	silt, dark olive gray (5Y 3/2), slightly moist, trace clay, low plasticity, Careaga.		ML				100	0/5.6	Drilling is tight.
150									
155	few clay.						100	0/0	
160							100	0/0	
165	less moist.						100	0/0	
170									

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170	<u>silt</u> , dark olive gray (5Y 3/2), very slightly moist, few clay, low plasticity, Careaga.		ML				100		
175	trace shell fragments.						100	0/0	
180									
	no trace shell fragments.								
185							100	0/0	Drilling is tight.
190							100	0/0	
195									

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195	<u>silt</u> , dark olive gray (5Y 3/2), slightly moist, few clay, low plasticity, Careaga.		ML				100	0/0	Drilling is tight.
200									
205							100	0/0	
210									
215							100	0/0	1345 End drilling at 214 ft. bgs Monterey Shale bedrock encountered at 214 ft bgs. Drill bit refusal at 214 ft bgs.
220							100	0/1.4	